

MEMORANDUM

230859



TO: GENE FOWLER, CASE MANAGER, BNCM

FROM: TERRY MCADAMS, TECHNICAL COORDINATOR, BEERA

SITE: UNIMATIC MANUFACTURING CORPORATION  
FAIRFIELD TOWNSHIP, ESSEX COUNTY  
ISRA CASE #: E20010335

Referral Type(s): Two Remedial Investigation Workplans (RIW)  
Remedial Investigation Report

Documents Dated: 06/09/05  
09/12/05  
09/12/05

Job Code: A1988200

PAC Codes: V3W2

Referral Date: 09/21/05

Completion Date: 11/22/05

NOTE TO CASE MANAGER:

SUMMARY:

The Unimatic Manufacturing Corporation (Unimatic) property is a 1.23 acre former manufacturing facility located at Block 2303, Lot 8, 25 Sherwood Lane, Fairfield Township, NJ ("the site"). The company operated an aluminum die-casting manufacturing business at the site from 1955 to 2001, making extensive historic use of PCB-laden lubricants. The site has a well-documented history of PCB soil contamination, some of which has migrated off-site. Extensive soil excavation has already been performed at the site. Groundwater PCB contamination has also been documented at the site. A 4/3/03 DEP letter responding to RIR submittals on 06/07/02, 08/09/02 and 10/29/02, required submittal of another RIR addressing interior and exterior PCB delineation, off-site PCB migration, groundwater contamination, institutional and engineering controls, historic fill sampling, septic system sampling, as well as sampling of soils under a leaking on-site drum. An 11/05/03 RIR, prepared on behalf of Unimatic by GZA GeoEnvironmental, Inc. (GZA), was submitted in response to the requirements detailed in the aforementioned DEP letter. BEERA transmitted comments on that RIR to the Case Manager on 02/2/04, 04/08/04 and 04/12/04, and a letter was sent to Unimatic on 11/09/04.

This review focuses on the RIR and two RIWs submitted by Unimatic on 09/14/05. Unimatic reports that submittal of these reports was delayed past the original 06/05 due date due to the need to reach a consensus among the numerous interested parties in this case, including: the former Unimatic owners; Framework, the present owner and occupant of the site; and three insurance companies. Further delays were a result of actions taken to satisfy requirements of the federal Occupational Safety and Health Administration (OSHA). A quality assurance/quality control (QA/QC) review of the laboratory data deliverables included in the RIR is also included. All comments will be forwarded to the Case Manager.

THESE RIR/RIWs ARE CONDITIONALLY ACCEPTABLE, SUBJECT TO REVIEW OF THE SUBMITTAL ITEMS REQUIRED BELOW.

A. Property

The Unimatic site is 1.23 acres in size and has one approximately 18,000 square foot building located in the northwest corner of the site. The water table across the site is approximately 16 to 17 feet bgs. Five interior floor trenches were formerly located in the building. The site shares a common border to the north and northwest with lands owned by the Jersey City Municipal Utilities Authority (JCMUA). The closest surface body of

water was not reported. Surrounding land uses to the south and east were not reported. Six monitoring wells have been installed in the northern and eastern portions of the site.

**B. Wastewater Discharges**

Two exterior underground septic systems were formerly sited immediately to the south of the building. One exterior buried wastewater outfall pipe formerly exited the northern wall of the building and continued along that wall in an easterly direction, stopping short of the eastern property line. Another exterior wastewater outfall pipe formerly exited the eastern wall of the building and continued to the northern property line.

**RIR/RIWs**

NOTE TO THE CASE MANAGER: The following comments are in response to your referral. Most site issues, as well as the open AOCs #6, 8 and 9 are discussed in the 09/12/05 letter RIW submitted by GZA. The open AOCs # 5, and interior concrete floor sampling are discussed in the 09/12/05 GZA RIR. The remaining open AOC # 7 is discussed in the 06/09/05 GZA RIW. All three reports are commented on below. For convenience, the paragraph headings and formatting used in the NJDEP 11/09/04 letter are used below.

**UNIMATIC'S 09/12/05 LETTER RIW**

**GENERAL COMMENTS**

**Laboratory QA/QC Issues**

Unimatic addressed several NJDEP concerns with the prior QA/QC reporting and proposed that the prior laboratory data deliverables be accepted as presented.

BEERA Comments: The proposal is acceptable.

**Soils Delineation**

Unimatic proposes to delineate all impacted soils horizontally to the Residential Direct Contact Soil Cleanup Criteria (RDCSCC). Unimatic proposes to delineate all impacted site soils vertically to the Impact to Ground Water Soil Cleanup Criteria (IGWSCC), under the provisions of the Technical Rules for Site Remediation (TRSR) at N.J.A.C. 7:26E-4.1(b) in all areas that will be placed under a proposed Deed Notice.

BEERA Comments: Proposal is acceptable for horizontal delineation and unacceptable for vertical delineation.

Unimatic's proposal for vertical delineation of all impacted soils to the IGWSCC is unacceptable. Even if the NJDEP approves a Deed Notice for the site, N.J.A.C. 7:26E-4.1(b) requires delineation to either the applicable restricted use standard (in this case, the Nonresidential Direct Contact Soil Cleanup Criteria (NRDCSCC)) or the IGWSCC, whichever is lower. Approval of the Deed Notice and NRDCSCC delineation standard is contingent upon Unimatic's determination of the future use of the building and grounds (low occupancy versus high occupancy). Until such time as a Deed Notice is approved for some or all impacted soils on the site, the delineation standard for all exterior impacted soils at this site is the RDCSCC.

In order to minimize disruption to building operations, Unimatic may delineate only those impacted soils under the building to the IGWSCC. This delineation may either be completed prior to soils remediation or as post-excavation sampling during the remediation.

## Appropriate Soil Cleanup Standards

Unimatic proposes the use of soil stabilization for remaining soils located outside the building that require remediation. Unimatic maintains that soil stabilization will remediate these remaining soils to the IGWSCC of 50 ppm.

BEERA Comments: Proposal conditionally acceptable for site soils. The soils remediation standard to be applied is predicated on the findings of the ground water investigation. As the ground water analytical results for PCBs remain well above the NJDEP's Ground Water Quality Standard (GWQS), at N.J.A.C. 7:9-6 of 0.5 parts-per-billion (ppb) at four of the six site monitoring wells (MWs 2, 4, 5 and 6), the NJDEP's alternate IGWSCC of 100 ppb is no longer applicable. Therefore, the NJDEP's May 12, 1999 IGWSCC of 50 parts-per-million (ppm) shall apply to all on-site remediation of PCB-impacted soils. If Unimatic chooses to remediate only those soils that have PCB levels greater than 100 ppm and to address the remaining contaminants via a soil stabilization method, then Unimatic shall first obtain a letter authorization from the US Environmental Protection Agency (USEPA) under the provisions of 40 CFR Part 761. Unimatic shall also propose a risk-based soil analysis and included the details of this proposal in the next submittal. In addition, Unimatic shall propose a treatability study to assess the effectiveness of any soil stabilization and include the proposal in the next submittal. Otherwise, Unimatic shall remediate all impacted site soils to the IGWSCC of 50 ppm. This requirement also applies to the impacted soils located under the site building, which shall also be remediated to the IGWSCC.

## I. Soil Investigation

### A. Unimatic's Letter RIW Dated 08/20/03

Unimatic requested clarification of the Soil Cleanup Criteria (SCC) to be applied in the soils investigation.

BEERA Comments: See "Appropriate Soil Cleanup Standards" above.

### B. AOCs

#### 1. General Comments

Unimatic states that, in this and future submittals, they will refer to the "contamination gradient rule" rather than the "order of magnitude rule." Unimatic also supplied the required additional site history, stating that the Unimatic company founders reported the use of substantial quantities of die lubricants and hydraulic oils from approximately 1960 until the plant closed in 2002. Industry sources report that PCBs were used extensively in these lubricants and oils until they were banned in 1979. The founders also reported that plant die casting operations were fairly messy and resulted in considerable spillage in the building.

BEERA Comments: Clarification of the use of the contamination gradient and the submittal of the additional site history is acceptable.

#### 2. Former Above Ground Storage Tank Area

Unimatic clarified the sample labeling discrepancy for sample AST-2C and stated that the correct sample label is AST-2C (9.5-10 feet bgs). Unimatic states that this bore hole still vertically delineates AST-2B (5-5.5 feet bgs). Unimatic did not submit the required table of all sample locations as shown on the soil boring logs. Unimatic clarified confusion over the location of the analyzed samples on each boring log page, stating that the samples submitted for analysis are indicated in the Notes section of the boring logs. Lastly, Unimatic states that impacted soils in the AST area of the site were removed, sampled and, when this sampling detected PCB contamination, the soils were sent off-site to the Model Cities Landfill for disposal. The excavations were backfilled with certified clean fill.

BEERA Comments: The revised sample labeling is acceptable. However, Unimatic's statement that bore hole AST-2B vertically delineates AST-2B(5-5.5 feet bgs) is not acceptable. Figure #2 in this RIW indicates that bore hole AST-2B was not tested for PCBs at the next lower sampling location (14.5-15 feet bgs) below the contaminated sample AST-2B (9.5-10 feet bgs). Nor were any other boreholes at this AOC sampled for PCBs below the 10.5 feet bgs depth. Unimatic may argue that all the sampling at this AOC collectively establishes a contamination gradient at this AOC. Nonetheless, Unimatic shall complete the vertical delineation of sample AST-2B (9.5-10 feet bgs) to the RDCSCC and include the analytical results in the next submittal. Unimatic has still not submitted the tabulation of all sampling locations shown on the soil boring logs and Figure 2 that was required in the NJDEP 11/09/04 letter. Unimatic shall include this tabulation in the next submittal.

### **3. AOC 5: Wastewater Pipes**

#### **a. Building Interior Flooring PCB and VOC Investigation**

- ii. Unimatic reports that the eastern portion of the building manufacturing area was constructed in 1960, while the western portion of the manufacturing area was constructed in 1966. The concrete interior floors appear to be original in both these areas. Unimatic reports performing extensive sampling of the interior floors and reports the results of this sampling in detail in the RIW below. Generally, the investigations showed that the concrete flooring is impacted by PCBs to a depth of four to six inches, below which there is a steep decrease in PCB concentrations. Unimatic concludes that the sampling results indicate that the PCB contamination of the flooring is not an on-going source of PCBs in the underlying soils. Unimatic intends to propose a Deed Notice for the soils beneath the building slab and provide horizontal delineation sampling on the west side of the building in the 06/09/05 RIW discussed below.

BEERA Comments: Proposal is conditionally acceptable.

Unimatic's history of the building is acceptable. However, in the NJDEP 11/09/04 letter, Unimatic was required to state the intended future use of the building. Unimatic shall do this in the next submittal. Unimatic's sampling of the flooring at this AOC establishes that this flooring is not a continuing source of contamination to the underlying soils and is acceptable. Further comment on the horizontal delineation of the soils below the building is contained in the discussion of the 06/09/05 RIW, below.

- iii. With respect to the interior VOC investigation, Unimatic noted that the NJDEP request for resampling of boring FT-11 was confusing, as boring FT-10 had the higher initial PID reading. Unimatic further noted that resampling of FT-10 is not necessary, as nearby boring FT-8, which had a PID reading significantly higher than boring FT-10, was sampled in the same sampling event and contained no targeted VOC compounds.

BEERA Comments: Proposal is acceptable for soils.

#### **b. Exterior PCB Investigation - Eastern and Northern Portions of the Site**

Unimatic reports that the elevated TPHC levels in the samples labeled "Outfall Pipe" were the likely residue of the petroleum that carried the PCBs to this and other exterior AOCs. As the soils at this AOC were excavated to a depth of 10 feet bgs, and the Outfall Pipe sample was collected at 2.5-3 feet bgs, no further action is proposed at this AOC.

In the 06/09/05 RIW, under the discussion of AOC 5, Unimatic also addressed the need to horizontally delineate soil sample SB-38 (10-10.5) which contained PCBs above the RDCSCC. Unimatic proposes to reinstall borings SB-37 and SB-40 located west and north of SB-38 and collect soil samples at the 10-10.5 feet bgs interval for PCB analysis. Vertical contingency samples shall also be collected from these two borings at the 15-15.5 feet bgs interval. Unimatic also proposes installing soil borings SPE-23A, SPE-27A and SPE-28A at this AOC and collecting soil samples from these borings in the 25.5 to 28 feet bgs interval to complete vertical delineation of the PCB contamination in samples SPE-23, SPE-27 and SPE-28.

Unimatic also proposes collecting contingency samples from the three new borings at the 30.5 to 33 feet bgs interval.

BEERA Comments: Proposal is acceptable.

**c. Downward Sloping Wedge of PCB Impacted Soils North of the Building**

Unimatic explained that the soil samples SPE-35, SPE-39 and SPE-40 were analyzed with a mobile laboratory, and the locations of these samples was not recorded. This area was subsequently resampled after excavation.

BEERA Comments: This explanation is acceptable.

Unimatic also explained that the soil borings SB-82, SB-83, SB-84 were vertically delineated. Soils at this AOC have been excavated to approximately 22.5 feet bgs and soil stabilization is proposed for the deeper remaining PCB-contaminated soils at this AOC.

BEERA Comments: Proposal is conditionally acceptable. The completion of the vertical delineation of these three soil borings was not the issue raised in the NJDEP 11/09/04 letter. Rather, the issue is the depth of the remedial excavations at this AOC. Approval of soil stabilization at this area of the site is conditioned upon Unimatic obtaining the USEPA approval and submitting the risk assessment and treatability proposals required under "Appropriate Soil Cleanup Standards" above.

**d. Exterior PCB Investigation - Adjoining Jersey City Municipal Utility Authority Property**

Unimatic clarified the location of soil samples TP-1, PE-2 and also sample SB-38, which delineates PE-2 to the east on the former General Hose property. Unimatic reported that the contamination at soil borings TP-1, PE-2 and SPE-14 was excavated and replaced with certified clean fill. No further action is proposed at this AOC.

BEERA Comments: Proposal is acceptable for soils.

**e. Former Main Wastewater Pipe Elbow**

Unimatic was required to sample any soils excavated from a depth shallower than 15 feet bgs that were subsequently reused as backfill at this AOC. Unimatic reports that, since the outfall pipe was at a depth of 15 feet bgs, shallower soils were not sampled and were reused as backfill without sampling.

BEERA Comments: Proposal is not acceptable. Unimatic's statement that soils shallower than the depth of the outfall pipe could not be contaminated is unconvincing. Sample TP-1, for example, which is located further down the outfall pipe, contained PCBs at 80 ppm at a depth of 10-10.5 feet bgs. Other exterior areas of the site exhibit much shallower contamination. The fact that the soils excavated from this AOC were reused without sampling is not acceptable. These soils shall be sampled for PCBs in accordance with the Technical Rules for Site Remediation (TRSR) at N.J.A.C. 7:26E and the analytical results and, if necessary, remediation proposal, shall be included in the next submittal.

**f. Former Main Wastewater Pipe**

Unimatic again argues that the soils located above the main wastewater pipe at this AOC could not have been impacted and were thus used as backfill without sampling.

BEERA Comments: Proposal is not acceptable.

Refer to paragraph "f" of this AOC discussion (above) for the sampling requirements of the backfill material used at this AOC.

**g. Former Northern Wastewater Pipe**

Unimatic states that only certified clean fill was used as backfill at this AOC and, as such, does not require sampling.

BEERA Comments: Proposal is acceptable for soils.

**h. VOC Investigation - Eastern Portion of the Site**

Unimatic reports that the soils around soil boring SB-36 were remediated. No elevated PID readings were recorded and, therefore, no further actions are proposed.

BEERA Comments: Proposal is acceptable for soils.

**i. Soil Borings**

- 1) Soil Boring SB-27: Unimatic clarified Table 2 of the previous RIR and this explanation is acceptable.
- 2) Soil Boring SB-36: Unimatic again reports that the soils around soil boring SB-36 were remediated. No elevated PID readings were recorded and, therefore, no further actions are proposed.

BEERA Comments: Proposal is acceptable for soils.

- 3) Soil Boring SB-68: Unimatic corrected the reported PCB concentrations in this soils boring and explained that the deeper interval samples were not reported because vertical delineation in this boring was complete and the deeper samples were not analyzed.

BEERA Comments: Proposal is acceptable for soils.

**4. AOC 6: Fill Material**

Unimatic reports that the soils in the area around soil boring TP-1 were remediated in the first round of soil excavations at this site. Post-excavation soil samples were analyzed for PP metals and none of the samples contained exceedences of targeted metals. Also, in the 06/09/05 RIW, Unimatic notes that soil sample SB-94 (28.5 - 29) was analyzed out of the holding time. Unimatic proposes reinstalling borehole SB-94A near the original borehole and collecting one soil sample for PCB analysis. Pending the result of this analysis, Unimatic proposes no further actions at this AOC.

BEERA Comments: Proposal is conditionally acceptable for soils, pending the submittal of the SB-94A soil sample analytical results.

**5. AOC 8: Septic Systems**

Unimatic reports that they could not locate any plans or drawings of these abandoned septic systems, and that the approximate locations of these tanks came from an old hand drawing. Unimatic further maintains that the borings installed to date are adequate to investigate this AOC, that additional sampling and/or installation of test pits would be onerous, and proposes no further investigation at this AOC.

BEERA Comments: Proposal is conditionally acceptable.

As no documentation exists of the uses of this septic system, and spillage of PCBs in the building interior was extensive, Unimatic shall install one test pit at this AOC to determine the location and depth of one of the septic tanks. Unimatic shall then comply with the TRSR requirements at N.J.A.C. 7:26E-3.9 and collect two samples (one aqueous and one sludge) from within the tank and shall also collect one soil sample from the down gradient side of the tank within two feet of the side of the tank and 0 to 2.0 feet below the bottom of the tank. Analysis for all these samples shall be for PP metals and PCBs. The

### UNIMATIC'S 06/09/05 RIW

NOTE TO THE CASE MANAGER: This RIW contains remedial investigation proposals for AOCs 5, 6, 7 and 9. BEERA comments on AOCs 5, 6 and 9 are included with the comments on those AOCs in the 09/12/05 RIW discussion, above. The proposals for AOC 7 are discussed herein. Comment on the ground water sample analysis included in this RIW is deferred to the assigned BGWPA geologist.

#### AOC 7

In the 11/09/04 NJDEP letter, Unimatic was required to delineate the PCBs in the soils beneath the building. At the 01/20/05 meeting with representatives of Unimatic, the NJDEP agreed to allow Unimatic to collect soil samples west of the building in line with the existing samples and in lieu of additional sampling under the building. Unimatic proposes installing five soil borings immediately adjacent to the western building wall and collecting soil samples at the same depth intervals as the original contaminated soil samples previously collected under the building (3.0-3.5 feet bgs, 8.0-8.5 feet bgs and 13.0-13.5 feet bgs). Contingency samples will be collected in each boring at the 18.0-18.5 feet bgs interval. The analytical results of these samples will be included in the next submittal.

BEERA Comments: Proposal is acceptable.

### UNIMATIC'S 09/12/05 SUPPLEMENTAL RIR

NOTE TO THE CASE MANAGER: This RIR contains ground water sampling results, interior concrete floor ship sampling results, as well the analytical results, boring logs and laboratory data deliverables for these two sampling events.

#### I. Concrete Floor Investigation

Unimatic performed wipe and chip sample analysis of surfaces of the concrete floors within the building to determine if there was extensive surface PCB contamination within the building. The wipe samples were compared to the USEPA surface PCB cleanup standard of 0.01 mg/100cm<sup>3</sup>, whereas the chip samples were compared to the USEPA contaminated waste standard of 50 ppm. The wipe samples exceeded the standard at every sample location, with the PCB Aroclor 1248 levels in these samples ranging from 0.011 to 41 mg/100cm<sup>3</sup>. The chip samples exceeded the standard at 11 of the 20 sample locations, with the PCB Aroclor 1248 levels in these samples ranging from 62 to 9200 ppm.

Unimatic also collected and analyzed chip samples from two cores of the concrete flooring at bore holes F-7 and F-11. The samples were collected at the top and bottom of the core, as well as at the 2-3 inch interval, the 4-5 inch interval and the 6-7 inch interval.

The levels of the PCB Aroclor 1248 in core F-7 ranged from 25,000 ppm in the top sample to 11 ppm in the bottom sample. The levels of the PCB Aroclor 1248 in core F-11 ranged from 3,200 ppm in the top sample, increasing to 27,000 in the 4-5 inch sample, then decreasing to 60 ppm in the bottom sample. Based on this analysis, Unimatic proposes that the concrete flooring is not an on-going source of contamination of the soils beneath the building.

BEERA Comments: Proposal that the concrete flooring not be considered an on-going source of contamination to the underlying soils is acceptable.

#### II. Ground Water Investigation

BEERA Comments: Comment on the ground water results in this supplemental RIR is deferred to the assigned BGWPA geologist.

### III. Laboratory Data Deliverables Review

Data deliverables report prepared by APL Aqua Pro-Tech Laboratories, Fairfield, NJ for the 11/03-04/2004 ground water sampling event consisting of 10 aqueous samples. Analysis was for PCBs only, using method 609L. Two samples (#24110259-6 and -9 for MW-3 and MW-4, respectively) and one method blank each had one surrogate recovery above QC limits. These deficiencies notwithstanding, the laboratory data deliverables for these 10 ground water samples are acceptable as presented.

Data deliverables report prepared by Severn Trent Laboratories, Pittsburgh, PA for 10 concrete samples collected from two concrete cores from the building interior. Analysis was for PCBs and percent solids, using methods SW846 8082 and MCAWN 160.3 MOD, respectively. Due to the high concentrations of PCBs in the samples, all samples were analyzed in dilution. The cooler temperature upon arrival at the Pittsburgh laboratory was measured at 14 degrees centigrade. This deficiency notwithstanding, the laboratory data deliverables for these 10 concrete samples are acceptable as presented.

Additional comments can be offered after the submittals required above are made by the RP..

cc: B. Hanrahan, BGWPA  
# 6886, 6887, 6889